

WHAT IS CLAIMED IS:

1. A DSL modem apparatus comprising:
  - a notch that cuts a signal at a frequency location of a predetermined signal, the signal being transmitted by an opposing communication apparatus;
  - a transmitter that outputs a transmission signal to a line, the signal having passed through said notch;
  - a receiver that receives a signal from the line; and
  - an echo canceller that removes an echo signal from the received signal, the echo signal relating to the transmission signal of its own apparatus, the received signal having passed through said notch.
2. The DSL modem apparatus according to claim 1, wherein a training signal of the echo canceller passes through the notch so that an echo canceller learning is performed under a condition where the transmission signal of its own apparatus does not have an echo at a frequency of the predetermined signal.
3. A DSL modem apparatus provided at a transmission side of an upstream, the apparatus comprising:
  - a controller that uses a range of carrier indexes for the upstream, the range being the same as a downstream;
  - a notch that cuts a signal at a frequency location of a PILOT signal of the downstream side;
  - a transmitter that outputs a transmission signal to a line, said signal having passed said notch;
  - a receiver that receives a signal from the line; and
  - an echo canceller that removes an echo signal from the received signal, the echo signal relating to the transmission signal of its own apparatus, the received signal having passed through said notch.
4. A communication control method comprising:
  - stopping the data communication for a carrier index of a predetermined signal, the

signal being transmitted by an opposing communication apparatus; and

cutting an echo of a transmission signal from its own apparatus and a reception signal at a frequency location of the predetermined signal, the reception signal being received from the opposing communication apparatus.

5. A communication control method comprising:

cutting a transmission signal from its own apparatus at a frequency location of a predetermined signal, the predetermined signal being transmitted by an opposing communication apparatus;

cutting a reception signal received from the opposing communication apparatus at the frequency location of the predetermined signal; and

outputting a training signal of an echo canceller under a condition where the transmission signal of its own apparatus does not have an echo at a frequency of the predetermined signal.

6. A communication control method for a DSL communication that uses, for upstream communication, the same frequency band as the entire frequency band of a downstream, the method comprising:

cutting, in the upstream, an echo of a transmission signal and a PILOT signal at a frequency location of the PILOT signal, the PILOT signal being transmitted by an opposing communication apparatus; and

outputting a training signal of an echo canceller under a condition where the transmission signal does not have an echo at a frequency of the PILOT signal.